COST OF NEW ASSIGNMENTS

	sta	city	cur NTSC	new DTV	base cost	mutual cost	combined
	1559 WA	RICHLAND	31	30	.19	1.81	2.00
	1560 WA	SEATTLE	4	38	892.12	.00	892.12
	1561 WA	SEATTLE	5	48	939.21	17.01	956.22
	1562 WA	SEATTLE	7	39	892.86	.00	892.86
	1563 WA	SEATTLE	9	41	900.56	.00	900.56
	1564 WA	SEATTLE	22	25	843.88	.00	843.88
	1565 WA	SEATTLE	45	44	801.14	.00	801.14
	1568 WA	SPOKANE	6	55	37.50	.00	37.50
	1569 WA	SPOKANE	7	39	23.21	.00	23.21
*	2182 WA	SPOKANE	14				
	1570 WA	SPOKANE	22	38	22.56	24.69	47.25
	1571 WA	SPOKANE	28	29	800.00	.00	800.00
	1566 WA	SPOKANE	2	57	39.28	.00	39.28
	1567 WA	SPOKANE	4	54	36.61	.00	36.61
	1576 WA	TACOMA	56	42	904.66	.00	904.66
	1572 WA	TACOMA	11	36	883.15	.00	883.15
	1573 WA	TACOMA	13	18	6.04	.00	6.04
	1574 WA	TACOMA	20	14	804.24	.00	804.24
	1575 WA	TACOMA	28	26	852.82	1.66	854.48
	1577 WA	VANCOUVER	49	48	.02	17.01	17.02
	1578 WA	WENATCHEE	27	56	47.63	5.47	53.10
	1581 WA	YAKIMA	35	34	.00	.00	.00
	1582 WA	YAKIMA	47	21	7.14	.00	7.14
	1579 WA	YAKIMA	23	16	5.54	.00	5.54
*	2185 WA	YAKIMA	52				
	1580 WA	YAKIMA	29	52	1034.82	.00	1034.82
	1583 WI	APPLETON	32	59	41.07	4.69	45.76
*	2187 WI	ASHLAND	25				
	1584 WI	CHIPPEWA FALLS	48	49	.00	.00	.00
	1585 WI	EAGLE RIVER	34	17	3.57	11.41	14.98
	1587 WI	EAU CLAIRE	18	15	2.13	.00	2.13
	1586 WI	EAU CLAIRE	13	39	23.98	.00	23.98
	1588 WI	FOND DU LAC	68	44	1189.78	.00	1189.78
	1593 WI	GREEN BAY	38	42	25.89	9.51	35.40
	1589 WI	GREEN BAY	2	23	13.37	.00	13.37
	1590 WI	GREEN BAY	5	56	38.40	3.84	42.23
	1591 WI	GREEN BAY	11	51	33.93	2.63	36.56
	1592 WI	GREEN BAY	26	41	25.00	11.37	36.38
	1594 WI	JANESVILLE	57	32	42.28	.00	42.28
	1595 WI	KENOSHA	55	40	1024.11	7.01	1031.12
	1597 WI	LA CROSSE	19	14	1.99	1.22	3.20
	1598 WI	LA CROSSE	25	17	4.79	3.71	8.50
	1599 WI	LA CROSSE	31	30	.00	.00	.00
	1596 WI	LA CROSSE	8	53	41.42	.00	41.42
	1604 WI	MADISON	47	11	66.19	.96	67.15
	1600 WI	MADISON	3	50	71.38	.00	71.38
	1601 WI	MADISON	15	19	14.20	62.83	77.04
	1602 WI	MADISON	21	20	16.97	1.71	18.69
	1603 WI	MADISON	27	26	21.65	.00	21.65
	1605 WI	MANITOWOC	16	19	5.76	62.83	68.60
	1606 WI	MAYVILLE	52	43	1026.79	73.50	1100.29
	1607 WI	MENOMONIE	28	27	.00	1.23	1.23
	1616 WI	MILWAUKEE	58	46	34.62	.27	34.90
	1608 WI	MILWAUKEE	4	28	37.10	1.47	38.57
	1609 WI	MILWAUKEE	6	33	26.16	.00	26.16
*	2189 WI	MILWAUKEE	8				
	1610 WI	MILWAUKEE	10	8	1000.00	.00	1000.00
	1611 WI	MILWAUKEE	12	34	27.25	2.99	30.24
	1612 WI	MILWAUKEE	18	61	800.19	.00	800.19

COST OF NEW ASSIGNMENTS

	sta		city	cur NTSC	new DTV	base cost	mutual cost	combined
	1613	WI	MILWAUKEE	24	25	.00	.00	.00
	1614	WI	MILWAUKEE	30	22	10.27	.47	10.73
	1615	WI	MILWAUKEE	36	35	4.06	31.17	35.23
	1617	WI	PARK FALLS	36	47	30.36	.00	30.36
	1618	WI	RACINE	49	48	.03	28.86	28.89
	1619	WI	RHINELANDER	12	16	7.51	.06	7.57
	1620	WI	SUPERIOR	6	19	7.21	.05	7.26
	1621	WI	SURING	14	21	11.99	0.00	12.00
*	2190	WI	TIGERTON, ETC.	4				
*	2191	WI	WAUKESHA	43				
	1623	WI	WAUSAU	9	29	14.87	.00	14.87
	1624	WI	WAUSAU	20	24	13.16	.00	13.16
	1622	WI	WAUSAU	7	40	25.19	3.48	28.67
	1626	WV	BLUEFIELD	40	14	8.25	30.90	39.15
	1625	WV	BLUEFIELD	6	46	49.07	.21	49.28
	1629	WV	CHARLESTON	29	39	23.21	8.81	32.03
	1627	WV	CHARLESTON	8	55	37.50	.00	37.50
	1628	WV	CHARLESTON	11	19	10.46	20.77	31.23
	1631	WV	CLARKSBURG	46	28	1013.39	7.85	1021.24
	1630	WV	CLARKSBURG	12	52	36.04	.18	36.22
	1632	WV	GRANDVIEW	9	53	41.13	.00	41.13
	1633	WV	HUNTINGTON	3	23	13.10	1.60	14.70
	1634	WV	HUNTINGTON	13	54	39.99	4.56	44.55
	1635	WV	HUNTINGTON	33	34	1.41	34.15	35.56
*	2193	WV	HUNTINGTON	17				
	1636	WV	LEWISBURG	59	48	35.69	.41	36.10
	1637	WV	MARTINSBURG	60	12	13.61	.00	13.61
	1638	WV	MORGANTOWN	24	33	24.45	13.69	38.15
	1639	WV	OAK HILL	4	50	33.03	1.13	34.17
	1640	WV	PARKERSBURG	15	49	34.67	5.52	40.19
	1641	WV	WESTON	5	58	40.18	.00	40.18
*	2195	WV	WHEELING	62				
	1642	WV	WHEELING	7	56	2238.36	1.37	2239.73
*	2194	WV	WHEELING	28				
	1645	WY	CASPER	20	18	4.46	1.87	6.34
*	2197	WY	CASPER	13				
	1643	WY	CASPER	2	17	4.41	.00	4.41
	1644	WY	CASPER	14	15	.00	.00	.00
	1646	WY	CHEYENNE	5	30	16.98	.00	16.98
	1647	WY	CHEYENNE	27	28	.00	.00	.00
	1648	WY	CHEYENNE	33	11	.00	.00	.00
*	2199	WY	CHEYENNE	39				
	1649	WY	JACKSON	2	14	.89	.00	.89
	1651	WY	LANDER	5	7	.97	.00	.97
	1650	WY	LANDER	4	8	.00	.00	.00
*	2202	WY	LARAMIE	63				
	1652	WY	RAWLINS	11	9	.00	.00	.00
	1653	WY	RIVERTON	10	16	2.68	.00	2.68
	1654	WY	ROCK SPRINGS	13	19	5.36	.00	5.36
	1655	WY	SHERIDAN	12	21	7.17	.00	7.17

APPENDIX B

STATEMENT OF ROBERT W. FISHER

STATEMENT OF ROBERT W. FISHER

Reconsideration of the Additional 19 dB protection Ratio for LPTV

In the *Sixth Report and Order*, Appendix E "Amendments to the Rules", The FCC indicates an amendment to the rules, adding §73.623 which specifies the Desired to Undesired ratios which, if exceeded, would result in interference. In the table on page E-34 of the appendix, an asterisk indicates that for analog TV into DTV that there is an additional 19 dB of protection required from an NTSC TV station to prevent the creation of interference to a DTV signal. In the note to the table and the requirement of § 74.706(d),(1), the FCC raises an issue which was previously never proposed or discussed in the Proposed Rulemakings that the DTV signal is, indeed, not robust in the NTSC to DTV environment as was indicated, but has a peripheral area of approximately 21 Km. which needs to be protected to an extremely high degree; that this perimeter "doughnut" requires protection almost equal to the most extreme case in NTSC, that of a non-offset NTSC to NTSC signal. The stated NTSC to DTV ratio would require an LPTV station to create no more than a 20 dBu F:50/10 signal at the edge of the protected contour of a UHF DTV station or a 7 dBu for a channel 2-6 DTV or 15 dBu signal for a channel 7-13 DTV station. These are extremely low signal strengths and would unnecessarily restrict the placement and channel usage of LPTV stations during the DTV transition. Indeed, if this very fragile protection zone actually exists, it would cast doubt, in the environment of full power NTSC interference, on the ability of DTV signals to replace the previous NTSC broadcast signal. It further raises an issue that TV stations should not be permitted to use the 41 dBu contour to satisfy the current requirement of coverage of their cities of license.

This is the first time in these proceedings that the additional requirement of protection to the DTV contour has been proposed and the CBA believes that the imposition of this additional level of interference protection is inconsistent with the methodologies used by the Commission in the DTV proceedings and that it unfairly targets LPTV stations which need to change facilities under DTV displacement requirements. The CBA requests that the additional 19 dB requirement be removed from LPTV stations.

The Additional 19 dB is Inconsistent with the FCC Methodologies.

Throughout the DTV proceeding, the co-channel interference ratio was stated as being at 1.8 or 2 dB below the DTV protected contour. This protection ratio would be similar to the protection level currently required of LPTV stations to protect a properly offset station. On UHF, the LPTV is limited to a 50/10 contour of 36 dBu, 28 dBu on Highband VHF, and 19 dBu on Lowband VHF channels. Without the additional 19 dB ratio, the LPTV to DTV protection levels would be 39, 34, and 26 dBu, respectively. However, the additional 19 dB requirement appears to be inconsistently applied and perhaps arbitrarily added to the final rulemaking.

The Commission's process of allocating paired DTV channels was based on the requirement of replacing the original NTSC coverage area and population with a suitable DTV signal. In order to determine which channels would be allotted to each NTSC station, the Commission used two programs, "TVGRID" and "ANNEAL" to perform automated channel analysis and selection. The programs worked in sequence, where TVGRID created a penalty file for all possible NTSC and DTV combinations and ANNEAL made channel selection decisions, based on spacing and interference criteria from the TVGRID "penalties" files, using "simulated

annealing" algorithms. In this analysis, interference ratios were used for NTSC:NTSC and DTV:NTSC as well as DTV :DTV to determine the potential for interference. These ratios were compared in TVGRID, a FORTRAN program which was used as the basis for all subsequent calculations and selections. In analyzing the program, it was determined that interference was calculated from NTSC to DTV at a uniform ratio throughout the complete coverage area of the DTV station, from the location of the transmitter to the full perimeter of the coverage contour. No algorithms were found which treated any area of the DTV signal in a different manner than another, or counted interference at the perimeter with a higher degree of impact than the same ratio toward the center of the coverage. In further analysis, it was determined that the basis for calculating interference was in a data block on line 143 in the FORTRAN include file "planning_factors.inc" as an "implied do" data statement:

& (ntsc_to_atv(0, i), i=1, 3) / 2.0, 2.0, 2.0/, !weak

This statement sets the TVGRID program to determine that NTSC to DTV interference exists when the NTSC signal exceeds a level 2 dB below the DTV signal. This was the only criteria used in the coverage replication and allotment process. Apparently the Commission did not believe that there was a greater interference requirement than the 1.8 (or 2) dB ratio at the time of the TVGRID analysis, and presumably the comment indicates that this protection ratio applies to a weak signal, such as would be found toward the edge of a coverage contour. In the TVGRID analysis, no additional interference "buffer area" was used and accordingly the application of an additional 19 dBu on LPTV stations is inconsistent with the analysis which created the table of allotments.

Although it could be argued that the additional standard applies to any change of the DTV allotment table, the requirement would have disproportionate impact. The DTV stations are allotted and nothing need be done to progress toward implementation, therefore no DTV station actually needs to use the 20 dBu requirement. However, many LPTV stations will be required to change facilities or channels to relocate during the transistion and the additional 19 dB requirement will be very influential in the survival of many stations. Accordingly, this requirement should be removed.

The Commission should Include Requirements of DTV Frequency Offset for LPTV - DTV Adjacent Channel Co-locations.

In the Comments to the *Sixth Further Notice of Proposed Rulemaking*, the CBA indicated that if an LPTV station co-located with a DTV station it would be required to stay within a tight frequency tolerance with regard to the DTV station to prevent receiving interference from the adjacent channel DTV station. Because most LPTV stations are required to maintain a specific frequency offset to minimize co-channel interference with NTSC stations, the LPTV station generally has no flexibility of choice of frequency offset. Conversely, with the exception of reducing adjacent channel interference caused to a co-located NTSC signal, a DTV station can operate on any offset it chooses without any effect whatsoever. The CBA requests reconsideration of the issue of requiring DTV stations which are co-located with LPTV stations to match the frequency offset of the LPTV station, as a method of interference reduction and spectral efficiency.

The Commission should Include Requirements of "Forced Upgrades" for Low Stability or Improperly Offset LPTV Stations.

As a method of improving density of co-channel LPTV stations, The CBA requests that the Commission re-consider the issue of including regulations which would permit LPTV stations to force an upgrade on other stations then they are unnecessarily restricted because of a non-offset or in-efficiently offset co-channel frequencies. The use of non-offset transmitters unnecessarily blocks co-channel frequency usage and with the extreme spectrum shortfall put onto LPTV, this inefficiency should be prohibited. Therefore, the CBA requests the FCC create regulations which would:

1. Eliminate the use of low stability oscillators for all new applications and modifications of facilities.

2. Permit an LPTV licensee or permittee to change the offset of a co-channel LPTV station if it can be shown that greater spectrum efficiency could be achieved through such a change. Under this scenario, any expense to change offset would be borne solely by the initiating party.

Robert W. Fisher, Technical Consultant
Third Coast Broadcasting
8232 Southwest Freeway, Suite 460
Houston, TX 77074
Tel. 713-777-6656
Fax 713-777-4340

June 12, 1997